#4

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Attorney Docket No. 004367.00005

In the Application of:

McDONALD, Michael A., et al.

Serial No. 09/976,746 — Examiner: Not yet assigned.

Filed: October 12, 2001 — Art Unit: 1614

For: PARAMAGNETIC POLYMERIZED PROTEIN MICROSPHERES AND METHODS OF PREPARATION THEREOF

BOX Missing Parts
Assistant Commissioner for Patents
Washington DC 20231

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. Section 1.97-1.98, applicants wish to make the following references of record in the above-identified application. Copies of the references cited below are enclosed. The references also are listed on the enclosed and completed Form PTO/SB/08A.

This Information Disclosure Statement is filed under 37 C.F.R. § 1.97(b) within three months of this application's filing date and/or before the mailing of a first Office Action on the merits. Accordingly, there is no fee due for filing this Information Disclosure Statement.

REFERENCES

U.S. Patents

1.	6,193,953	Lohrmann, et al.	02/27/2001
2.	5,992,304	Unger, E. C.	07/13/1999
3.	5,582,172	Papisov, et al.	12/10/1996
4.	5,512,268	Grinstaff, et al.	04/30/1996
5.	5,508,021	Grinstaff, et al.	04/16/1996
6.	5,505,932	Grinstaff, et al.	04/09/1996

52. Yee, "Numerical Solution of Initial Boundary Value Problems Involving Maxwell's Equations in Isotropic Media," *IEEE Trans. Antennas Prop.*, 14(8) 302-07 (1966);

53. Zolle, et al., "Preparation Of Metabolizable Radioactive Human Serum Albumin Microspheres For Studies Of The Circulation," *International Journal of Applied Radiation And Isotopes*, Vol. 21: 155-167 (1970);

Respectfully submitted
BANNER & WITCOFF, LTD.

January 14, 2002

Rebecca P. Rokos
Reg. No. 42,109

7.	5,215,680	D'Arrigo, J.S.	06/01/1993
8.	4,849,210	Widder, K. J.	07/18/1989
9.	4,639,365	Sherry, A. D.	01/27/1987

Other Prior Art - Non Patent Literature Documents

1. Allen, et al., "Shell Waves and Acoustic Scattering from Ultrasound Contrast Agents," *IEEE Transactions On Ultrasonics, Ferroelectrics, And Frequency Control*, Vol. 48, No. 2: 409-418 (March 2001);

2. Barnhart, et al., "Characteristics of Albunex: Air-Filled Albumin Microspheres For Echocardiography Contrast Enhancement," *Investigative Radiology*, Vol. 2, Suppl. 1: S162-S164 (September 1990);

3. Bean and Livingston, "Superparamagnetism," *Journal of Applied Physics*, Supplement to Vol. 30, No. 4: 120S-129S (April 1959);

4. Bleeker, et al., "Ultrasonic Characterization Of Albunex®, A New Contrast Agent," *Journal of the Acoustical Society of America*, Vol. 87, No. 4: 1792-1797, (April 1990);

5. Bloem and Wondergem, "Gd-DTPA as a Contrast Agent in CT," *Radiology*, Vol. 171, No. 2: 578-579 (1989);

6. Bosquet, et al., "Gd-DOTA: Characterization Of A New Paramagnetic Complex" *Radiology*, Vol. 166, No. 3: 693-698 (March 1988);

7. Burnett, et al., "Gadolinium Oxide: A Prototype Agent For Contrast Enhanced Imaging Of The Liver And Spleen With Magnetic Resonance," *Magnetic Resonance Imaging*, Vol. 3, No. 1: 65-71 (1985);

8. Burton, et al., "Proton Relaxation Enhancement (PRE) In Biochemistry: A Critical Survey," *Progress In NMR Spectroscopy*, Vol. 13: 1-45 (1979);

9. Chang, et al., "Second Harmonic Imaging And Harmonic Doppler Measurements With Albunex®," *IEEE Transactions On Ultrasonics, Ferroelectrics, And Frequency Control*, Vol. 42, No. 5: 1020-1027, (November 1995);

10. Chin and Burns, "Predicting The Acoustic Response Of A Microbubble Population For Contrast Imaging In Medical Ultrasound," *Ultrasound in Med. & Biol.*, Vol. 26, No. 8: 1293-1300, (2000);

11. Church, "The Effects Of An Elastic Solid Surface Layer On The Radial Pulsations of Gas Bubbles," *Journal of Acoustical Society of America*, Vol. 97, No. 3: 1510-1512 (1995);

12. Daly, et al., "MR Image Time-Intensity Relations In Spleen And Kidney: A Comparative Study of GdDTPA, Albumin-(GdDTPA), and Gd_2O_3 Colloid," *American Journal of Physiologic Imaging*, 5: 119-124 (1990);

13. Dayton, et al., "A Preliminary Evaluation of the Effects of Primary and Secondary Radiation Forces On Acoustic Contrast Agents," *IEEE Transactions On Ultrasonics, Ferroelectrics, And Frequency Control*, Vol. 44, No. 6: 1264-1277 (November 1997);

14. Dayton, et al., "Optical and Acoustical Observations of the Effects of Ultrasound on Contrast Agents," *IEEE Transactions On Ultrasonics, Ferroelectrics, And Frequency Control*, Vol. 46, No. 1: 220-232 (January 1999);

15. de Jong, et al., "Absorption And Scatter Of Encapsulated Gas Filled Microspheres: Theoretical Considerations And Some Measurements," *Ultrasonics*, Vol. 30, No. 2: 95-103 (1992);

16. de Jong, et al., "Higher Harmonics Of Vibrating Gas-Filled Microspheres. Part One: Simulations," *Ultrasonics*, Vol. 32, No. 6: 447-453 (1994) ;

17. de Jong, et al., "Ultrasound Scattering Properties of Albunex Microspheres," *Ultrasonics*, Vol. 31, No. 3: 175-181 (1993);

18. Forsberg, et al., "Quantitative Acoustic Characterization of A New Surfactant-Based Ultrasound Contrast Agent," *Ultrasound in Med. & Biol.*, Vol. 23, No. 8: 1201-1208 (1997);

19. Forsberg, et al., "In Viro Evaluation of a New Ultrasound Contrast Agent," *Proceeding of 1994 IEEE Ultrasonics Symposium*, 1555-58 (1994);

20. Frinking, et al., "Ultrasound Contrast Imaging; Current And New Potential Methods," *Ultrasound in Med. & Biol.*, Vol. 26, No. 6: 965-975 (2000);

21. Gierada and Bae, "Gadolinium As A CT Contrast Agent: Assessment In A Porcine Model," *Radiology*, 210: 829-834 (1999);

22. Goldberg, "Ultrasound Contrast Agents," *Clin. Diag. Ultrasound,*, 28: 35-45 (1993);

23. Hall, et al., "Experimental Determination Of Phase Velocity Of Perfluoracarons: Applications To Targeted Contrast Agents), *IEEE Transactions On Ultrasonics, Ferroelectrics, And Frequency Control*, Vol. 47, No. 1: 75-84 (2000);

24. Havron, et al., "Heavy Metal Particulate Contrast Materials For Computed Tomography Of The Liver," *Journal of Computer Assisted Tomography*, Vol. 4, No. 5: 642-648 (October 1980);

25. Kimura, et al., "Preparation and Characterization of Echogenic Liposome as an Ultrasound Contrast Agent," *Chem. Pharm. Bull.*, Vol. 46, No. 10: 1493-96 (1998);

26. Lazewatsky, et al., "The Effect of Dilution Medium On The Measurement of In-Vitro Properties of Ultrasound Contrast Agents," *IEEE Ultrasonics Symposium*, 1737-1742 (1999);

27. Madsen, "Method Of Determination Of Acoustic Backscatter And Attenuation Coefficients Independent Of Depth And Instrumentation," *Ultrasonic Scattering in Biological Tissue*, (1993);

28. Manry and Broschat, "FDTD Simulations for Ultrasound Propagation In A 2-D Breast Model," *Ultrason. Imaging* 18, 25-34 (1996);

29. Mast, et al., "Simulation of Ultrasonic Pulse Propagation Through The Abdominal Wall," *Journal of Acoustical Society of America*, Vol. 102, No. 2: 1177-1190 (1997);

30. Mattrey and Long, "Potential Role Of PFOB In Diagnostic Imaging," *Invest. Radiol.*, 23(Suppl. 1): S298-S301 (1988);

31. Mattrey, "Perfluorooctylbromide: A New Contrast Agent for CT, Sonography, and MR Imaging," *AJR*, 152: 247-252 (1989);

32. Medwin, "Counting Bubbles Acoustically: A Review," *Ultrasonics*, (1977);

33. Morgan, et al., "Changes in The Echoes From Ultrasonic Contrast Agents With Imaging Parameters," *IEEE Transactions On Ultrasonics, Ferroelectrics, And Frequency Control*, Vol. 45, No. 6: 1537-1548 (November 1998);

34. Morgan, et al., "Experimental And Theoretical Evaluation Of Microbubble Behavior: Effect Of Transmitted Phase And Bubble Size," *IEEE Transactions On Ultrasonics, Ferroelectrics, And Frequency Control*, Vo. 47, No. 6: 1494-1509 (November 2000);

35. Niesman, et al., "Liposome Encapsulated MgCl as Liver Specific Contrast Agent for Magnetic Resonance Imaging," *Investigative Radiology*, 25: 545-51 (1990);

36. Quinn, et al., "Gd-DTPA: An Alternative Contrast Medium For CT," *Journal of Computer Assisted Tomography*, Vol. 18, No. 4: 634-636 (July/August 1994);

37. Sarkar and Prosperetti, "Coherent And Incoherent Scattering By Oceanic Bubbles," *Journal of Acoustical Society of America*, Vol. 96: 332-341 (1994);

38. Sarkar and Prosperetti, "Backscattering Of Underwater Noise By Bubble Clouds," *Journal of Acoustical Society of America*, Vol. 93: 3128-3138 (1993);

39. Sarkar, et al., "Numerical Simulation Of Separated Cavitation Behind A Sphere," *ASME Cavitation Multiphase Flow Forum*, Vol. 1, FED-236, 479-484 (1996);

40. Sarkar, et al., "Three Dimensional Numerical Simulation Of Bubble-Vortical Flow Interaction," *ASME Cavitation Multiphase Flow Forum*, FED-210, 135-143;

41. Sarkar & Schowalter, "Deformation Of A Two-Dimensional Drop At Non-Zero Reynolds Number In Time-Periodic Extensional Flows: Numerical Simulation," *Journal of Fluid Mechanics*, accepted (2001);

42. Sarkar & Schowalter, "Deformation Of A Two-Dimensional Viscous Drop In Time-Periodic Extensional Flows: Analytical Treatment," *Journal of Fluid Mechanics*, accepted (2001);

43. Sarkar & Schowalter, "Deformation Of A Two-Dimensional Viscoelastic Drop At Non-Zero Reynolds Number In Time-Periodic Extensional Flows," *Journal of Non-Newtonian Fluid Mechanics*, Vol. 95: 315-342 (2000);

44. Sboros, et al., "An *In Vitro* Comparison of Ultrasonic Contrast Agents In Solutions With Varying Air Levels," *Ultrasound in Med. & Biol.*, Vol. 26, No. 5: 807-818 (2000);

45. Schlief, "Echo-Enhancing Agents: Their Physics And Parmacology," *Advances In Echo Imaging Using Contrast Enhancement*, 2d ed., 85-112 (1997);

46. Seltzer, et al., "Hepatic Contrast Agents For Computed Tomography: High Atomic Number Particulate Material," *Journal of Computer Assisted Tomography*, Vol. 5, No. 3: 370-374 (June 1981);

47. Thakur, et al., "MR Imaging Of Pulmonary Parenchyma And Emboli By Paramagnetic And Superparamagnetic Contrast Agents," *Magnetic Resonance Imagining*, Vol. 8: 625-630 (1990);

48. Tokumitsu, et al., "Preparation of Gadopentetic Acid-Loaded Chitosan Microparticles for Gadolinium Neutron-Capture Therapy of Cancer By A Novel Emulsion-Droplet Coalescence Technique," *Chem. Pharm. Bulletin*, Vol. 47, No. 6: 838-842 (1999);

49. Widder, et al., "Magnetite Albumin Suspension: A Superparamagnetic Oral MR Contrast Agent," *AJR*, 149: 839-843 (October 1987);

50. Widder, et al., "Magnetite Albumin Microspheres: A New MR Contrast Material," *AJR* 148:399-404, (February 1987);

51. Ye, "On Sound Scattering And Attenuation of Albunex® Bubbles," *Journal of the Acoustical Society of America*, Vol. 100, No. 4, Part 1: 2011-2028 (October 1996);